

## ABSTRAK

Telah dilakukan kajian mengenai pengaruh bionutrien S267 terhadap tanaman kelapa sawit TM-08. Penelitian ini terdiri dari preparasi, karakterisasi, dan aplikasi bionutrien S267 terhadap produktivitas tanaman kelapa sawit. Bionutrien S267 disiapkan melalui metode maserasi. Bionutrien S267 dikarakterisasi dengan FTIR, UV, dan teknik spektroskopi serapan atom. Pemberian bionutrien S267 menggunakan beberapa variasi dosis (0,1%, 0,3%, 0,5%, 0,7% dan 1%) dengan cara disemprotkan. Hasil penelitian menunjukkan bionutrien S267 mengandung metabolit sekunder dengan gugus fungsional yang khas seperti -OH,  $C\equiv C$ ,  $C = C$  (aromatik), CH, dan CO. Kadar N, P dan K pada bionutrien S267 masing-masing sebesar 2,04%, 0,25%, dan 0,52% dari berat sampel. Bionutrien S267 dapat memberikan kontribusi positif terhadap produktivitas tanaman kelapa sawit TM-08, hasil penelitian pada dosis optimum 0,5% menunjukkan kemunculan bunga betina, jumlah tandan dan massa tandan selama satu tahun secara berturut turut adalah 151 bunga (reratanya yaitu 10,06 bunga betina perpohon), 144 tandan (reratanya yaitu 9,6 tandan perpohon) dan 4095 kg (reratanya yaitu 273 kg perpohon), randemen tertinggi diperoleh sebesar 28,74% pada dosis 1%. Penerapan bionutrien S267 dapat meningkatkan produktivitas tanaman sawit.

Kata kunci : Bionutrien S267, Tanaman Kelapa Sawit TM-08, Tandan

## **ABSTRACT**

*The study on the effect of bio-nutrient S267 on palm tree productivity has been conducted. This study was consisted of preparation, characterization, and performance test of bio-nutrient S267 on palm tree productivity. In particular, the bio-nutrient S267 was prepared through maceration method. The bio-nutrient S267 was characterized using FTIR, UV, and atomic absorption spectroscopy techniques. The bio-nutrient S267 was applied to palm tree on various dosage (0.1%, 0.3%, 0.5%, 0.7% and 1%) by foliar spray method. The result showed that bio-nutrient S267 contained secondary metabolites with typical functional groups such as –OH, C≡C, C=C (aromatic), C-H, and C-O. The bio-nutrient S267 contained N, P, and K concentration of 2.04%, 0.25%, and 0.52%, respectively. Additionally, bio-nutrient S267 gave the remarkable effect on palm tree productivity at optimum dosage of 0.5 % which indicated by the appearance of stamens, number of palm bunches number, bunches weight in a year were 151 (average of 10.06/ tree), 144 (average of 9.6/tree), 4095 kg (average of 273 kg/tree), respectively. The highest yield was 28.74% at dosage of 1 % bio-nutrient S267. The application of bio-nutrient S267 was significantly improved the productivity of palm trees.*

*Keywords: Bio-nutrients S267, Palm tree (TM-08), Bunches*